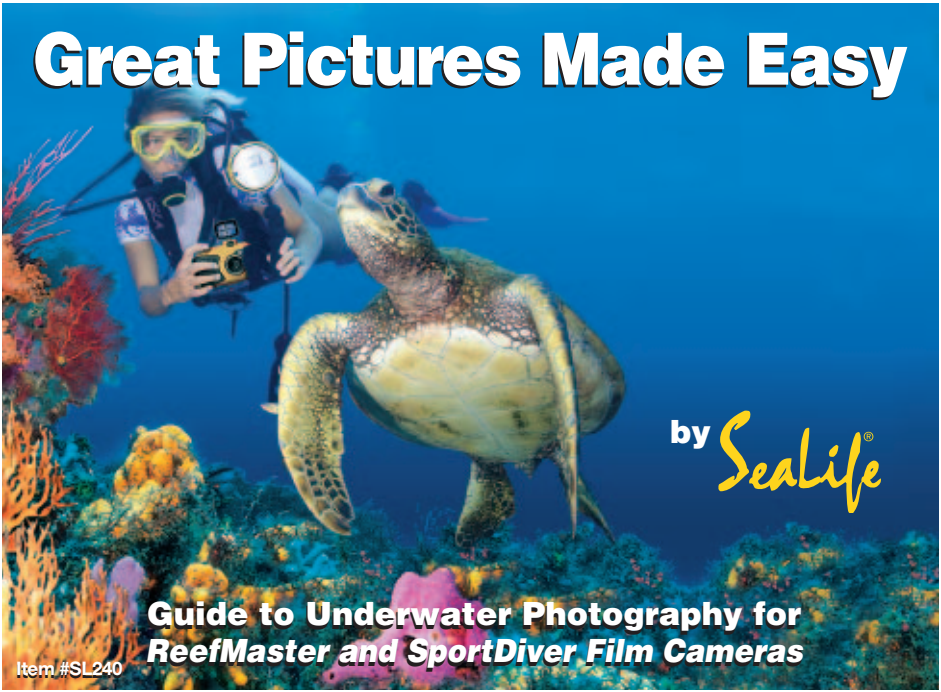
Great Pictures Made Easy



by SeaLife®

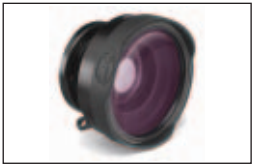
Guide to Underwater Photography for *ReefMaster and SportDiver Film Cameras*

Item #SL240

Popular SeaLife® ReefMaster® Camera Accessories:

External Flash (SL960)
for more colorful pictures.

Close-Up Set with 8X and 16X lenses.
(SL959) for close-up macro pictures.



Wide angle lens increases field
of view by 50% (SL970).

Moisture Muncher desiccant
to prevent fogging (SL911).

4 Rechargeable Ni-MH Batteries,
Size AA (Nickel Metal Hydride)
SL191

Hard and soft carry cases.
4 sizes available.

For more information please visit the Sealife website at:

www.sealife-cameras.com

I. Introduction

Thank you for purchasing a SeaLife camera. You are on your way to discovering the beauty and magic of our underwater world. Your SeaLife camera will add a new dimension of excitement to your undersea adventure. There is no better way to preserve your memories or share the thrills with your friends and family than by showing a picture.

This manual will teach you how to set-up and care for your underwater camera to ensure years of trouble-free operation. You will learn the secrets on how to take great pictures. Good and bad picture samples are included in this manual for you to compare and learn from your experience. The rest of the adventure is up to you.

Please let us know if there is any way we can help by contacting us at service@sealife-cameras.com or calling (856) 866-9192.

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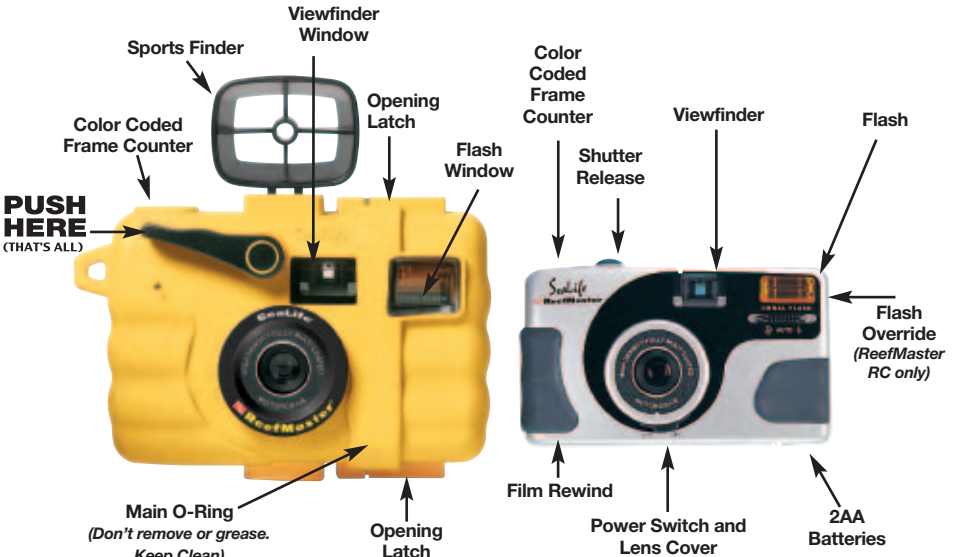
Warning: Before operating the camera you must read and understand this manual. For updates to this manual visit www.sealife-cameras.com.

Send your suggestions regarding this manual to:

Pioneer Research
Attn: Sealife Manuals
97 Foster Rd, Moorestown, NJ 08057
service@sealife-cameras.com

II. Getting to Know Your Camera:



Applies to SeaLife ReefMaster® and Sport Diver II

Viewfinder Window
Sports Finder
Opening Latch
Color Coded Frame Counter
Flash Window
PUSH HERE
(THAT'S ALL)
Main O-Ring
(Don't remove or grease. Keep Clean)
Opening Latch

III. MUST DO!

Very Important: Not following these points may void your warranty.

All Camera Models

A) Before opening the camera housing: Everything, including your hands, arms, and head must be ABSOLUTELY DRY: Have a dry towel handy. Change film or batteries in an air-conditioned or dry, cool room. Insert the 1.5 g. Moisture Muncher Capsule to prevent fogging. (See page 12). One drop of water in the housing may cause the lens to fog.

B) ***The O-ring must be completely seated in the groove, smooth and clean. DO NOT REMOVE or GREASE O-RING!.*** O-ring is glued in place. Follow O-ring care instructions on page 11.

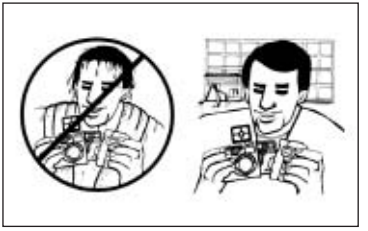
C) After use and before opening immediately **wash closed camera housing in fresh water** and **dry well**. It's normal for some water to become trapped between the ReefMaster armor and housing. This will not cause any damage and eventually dry. In addition, periodically wash open housing without inner camera. After washing, dry well. Clean lenses with cleaning pads lightly soaked in detergent and water, then rinse and dry. Do not let drops dry on lenses.

D) Use the unbreakable airtight **SeaLife Dry Case** for dry storage with a large 1 oz. Moisture Muncher Pack and for transportation on boats, airplanes, trucks etc. The lifetime of batteries as well as the camera and other tools or electronics will be greatly extended. (See page 17).

IV. How Easy It Is...
Set up your new SeaLife Camera

Open both latches

Most important: When opening the housing, your hands, arms, head, and the camera must be **completely dry and clean of water, sand and dust**. Always load your camera in an air-conditioned or dry cool room.



a) Remove Inner Camera

Remove the inner camera from the housing and insert fresh AA batteries.

Remove the inside camera

Insert 2 fresh AA Alkaline batteries in film cameras. SeaLife rechargeable NiMH batteries are recommended.

b) Turn Power On

Turn **Camera Power** on before inserting camera in housing: Open the **lens cover** by moving the switch below the lens of the inner camera. This will turn the power on. Push the shutter release to test power (without film).

Turn power ON by opening lens cover switch.

Open film door by sliding down latch on back of inner camera.

c) Loading Film and Fresh Batteries

a) Use 200 speed 24 exposure film and 2 fresh AA Alkaline batteries. Replace batteries if "Flash Ready" light takes more than 12 seconds to recycle.

b) Turn camera power ON (below lens of inner camera) by opening lens cover switch.

c) Before loading film, push shutter button once to test camera advance.

d) Insert film roll. Make sure roll is properly seated onto rewind shaft.

e) Pull film tab over and into take-up spool and press shutter until film engages. Film should lay flat across film plane and sprocket teeth.

f) Close film door. If the film door is obstructed by film roll, remove and re-insert roll until film door closes without any obstruction.

g) Push Shutter button to advance film to picture "1" in the frame counter window.

h) You might advance film by one frame with the film door open to check proper advance and position of the film.

Close door. If hatch does not close easily, film cartridge is not in correct position.

Advance until frame counter reads 1. Film counter turns red 4 frames before end of film.

d) Clean O-Ring / Seal Area

The waterproof seal is the most critical part. It must be kept meticulously clean. You must carefully check the O-ring area before each use. Brush away any **sand, dirt, hair, etc**. from O-ring. Use the cleaning brush provided.

Do not remove O-rings.

Clean off O-ring with brush provided.

The O-ring should never be greased or removed. If the O-ring shows signs of damage have it replaced by an authorized SeaLife Service Facility. Ask your dealer or contact the SeaLife Service Center (see back cover) or your country's distributor.

Film Cameras

e) Insert SeaLife Anti Fog Desiccant. This will prevent fogging of the lens and protect the electronics from humidity. The small 1.5 g capsule fits between 2 ribs of ReefMaster film camera models and 2 cartridges clip into the housing of digital cameras. Do this in dry air without delay since Moisture Muncher will absorb moisture immediately once you open the air tight package. It is best done the night before the dive so Moisture Muncher has enough time to absorb all the humidity inside the camera. Whenever possible, load the camera in dry air, such as in an air conditioned room.

Always take a good supply of Moisture Muncher with you when you go on vacation. The larger 28 g / 1 oz. size is recommended to keep the inside of your airtight SeaLife Dive Travel and Accessory Case, tools and batteries completely dry and free from mildew and corrosion. SeaLife desiccant capsules and the larger Moisture Muncher Bag contain color indicator crystals that change from blue to pink as it absorbs moisture. Replace Moisture Muncher when crystals are pink in color. See page 37 for more details about Moisture Muncher.

IMPORTANT: Do not obstruct O-ring or sealing area with Moisture Muncher or housing will flood.

f) Insert Inner Camera and close housing lid

Insert the inner **film** camera with the **power on** and lens open (power switch below the lens). Make sure the Moisture Muncher or any other matter does not interfere with closing the housing.

Hold the latch down deep inside the strike while closing. Do not use force.

Power save function:
The power will turn off automatically, when the camera is not used within about 2 to 3 minutes and will turn on again by a light touch on the shutter release.

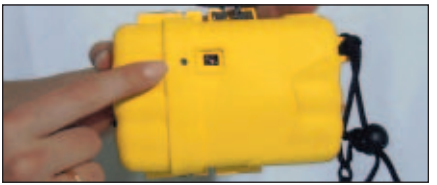
Take a test picture. If **film** does not advance or FLASH READY light does not turn on, see page 41 for Trouble Shooting Guide.

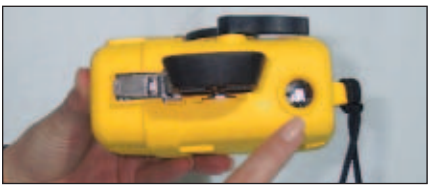
g) Taking a Test Picture

Just push the trigger or the shutter button of the camera. Everything is automatic.

h) Checking the Battery Condition

1. If FLASH READY takes longer than 12 seconds to turn on after taking a picture, your batteries are not in good condition and should be replaced. Always take extra batteries along.





2. Alkaline AA batteries normally last for about 8 rolls of film.

i) Cleaning After Use

After leaving the water, **the sealed camera housing should be washed thoroughly in fresh water. Never let salt water dry on the camera or the housing.** Dry with a clean towel. Salt crystals will damage the O-ring and lens and attract humidity. **Never let water drops dry on any lens.** Wipe it dry with a soft lens cleaning tissue. Allow camera to dry completely before storage.

j) Re-Winding the Film

With power on, slide the small switch at the bottom of the inner camera to rewind the film.

When the film is completely rewound and winder has stopped, open the back cover and put your film in a marked dry container and store it cool. *When taking your film to the lab, remember to request sample prints, called index print. (See page 33, letter e).*

k) Dry Storage

For long-term storage remove the batteries from the camera. Leaking batteries can ruin your camera. Store the camera with the latches not tightened inside an air tight **SeaLife Dry Case** with one large 1 oz. bag of Moisture Muncher. (See page 37).

For storage of additional parts you can cut openings in the foam with a sharp knife. If you buy the case as an optional accessory, pick & pluck foam lets you customize it. The large knob below the handle is a pressure equalizing valve. Turn this open after being in an airplane or at high altitude.

The SeaLife Dry Box has enough space for optional accessories, close-up lens, extra film, batteries, and perhaps even your spare parts. (See Spare Parts list on page 38).

Rechargeable NiMH batteries can lose up to 10% of power per day at room temperature. They should be stored refrigerated, but best is to re-charge them over night before your dive.

V. Tips for Great Pictures

a) Just Do It!

One of the best ways to learn about underwater photography is to just do it and learn from your best shots and from mistakes. Even the best photographers have taken countless bad pictures… that's the way they became better and better. Here is the trick: Just shoot anything in front of your lens in a variety of conditions, distances, colors, objects etc. Then look at every picture and take a note of what's good or bad about the shot. We evaluated several thousand pictures and found that even amateurs can take great pictures by simply avoiding a few common mistakes. (For the most common errors see the picture examples on pages 30-33). You will be surprised that among your snapshots you will find some award-winning pictures. Put the good ones in an album. But keep one bad shot of each typical error. After a while you will achieve good control and even perfection.

The best pictures are taken with a close-up lens which also acts as an underwater filter. The SeaLife 3X Close-Up Lens has a distance range from 2ft. - 4 ft/60 - 120 cm. In lower water visibility, the SeaLife Close-Up Lens is a must. The key to good pictures is to get close. The reason is that water absorbs more light than air. In air you could see up to 30 miles, in water your eyes can see 100 ft., at most, but a camera can see less than half of that and much less red and yellow than your eyes.

b) Capture the Magic

What do you want to capture on film? What attracts you to underwater photography? What scenes are so breathtaking that people say "this is so unbelievable, I wish I had a camera to show this to my friends"?

You will encounter strange creatures, see incredible effects of light and colors, explore

wrecks, corals and plants that appear as if they were from a different planet, while you float effortlessly through water without gravity.

And after years of adventures with your SeaLife camera you will look at your albums, perhaps even at an impressive gallery of framed enlargements. And it may be only then that you discover the real treasure that you found with your camera: You have learned to use your eyes to see and experience the underwater world, one of the greatest miracles on earth.

As the manufacturer of SeaLife, we believe that an easy-to-use underwater camera will help millions of divers and non-divers to experience and see a part of our world which is essential to our survival.

And we hope that you will enrich and enlighten your life by capturing valuable impressions in the underwater world with your SeaLife Camera.

c) The Great Hunt

While you hunt for a big strange fish or a good shot of your buddy with a stingray, always include the underwater magic in your pictures.

Get a mystic blue **background**, an interesting little red fish and yellow coral in the **foreground**. These color contrasts will add **depth** to your pictures.

Capture rising air bubbles against the reflections of the surface water. This will indicate motion.

Use the walls of a canyon as a **frame** for your object, look for **contrasting** colors, bizarre shapes, towering kelp forests, subtle shades of water colors, sand and rock, wild structures, or dark shades of a wreck penetrated by spears of sun rays.

The primary target for most people is, of course, a good picture of yourself and your friends surrounded by tropical fish. This is actually the easiest part.

A diver should be only 5ft./1 50 cm. away for a good picture. Portrait shots of diver and fish are best taken at 2ft. to 4 ft. with the snap-on 3X Close-Up lens. Use the 8X Close-Up lens for extreme close-up of 14" to 16" / 36 cm. to 41 cm. For larger objects such as group shots or sharks use the SeaLife wide angle lens at distances of 3 - 5 ft. / 90-150 cm.

You may chum for fish with bits of food, but pick something that does not fall apart and cloud up the water (for example, bread dissolves and clouds up the water). Check with a local dive master to select chum that does not endanger the fish.

Be very calm and patient, and let that curious fish get closer and closer. There are two ways of using current to your advantage: 1. Drift motionless along with your camera in ready position. 2. Stay in a camera-ready waiting position, approach your subject facing the current.

Always take notes of your pictures and mark your films. It is very exciting to document every fish in your area in an album.

Once you have some experience you might start to take slides and put a presentation together, possibly combined with music and video for dive clubs, schools and friends. Scan your best film pictures and use them just like digital images.

d) Great Effects

Everything about seeing and taking pictures is about light. Pay attention to **light and shade, colors and contrasts**, don't just get mesmerized by that big fish.

Your best colors and effects will be where the sun still penetrates the water: Dive or snorkel at a **vertical sun from 10 am to 2 pm in a depth not greater than 25 ft. / 8 m.**

Each depth and light condition has its own attraction. Experiment and capture different effects at different depths and scenes. **In crystal clear tropical waters** you will get great turquoise water colors to a depth of 20 ft. / 7 m., then an intense blue, and a wonderful deep blue beyond 40 ft. / 12 m. In the SeaLife ReefMaster RC film camera the built-in "Coral Flash" will intensify red and yellow colors of close objects (4 ft. to 6 ft. / 1.2 m. to 1.8 m.) and leave the blue background untouched. Color corrected macro lenses will intensify the warm colors (red and yellow) even more and moderate the flash.

Look for **rich color contrasts**. Use the Sealife External Flash to add color and brightness. To really illuminate coral or any area further than 5 ft., you cannot just increase the power of your flash, but you must position one or two external flashes sideways of your lens and direct it at an angle of 20 to 30 degrees at the object. If the water is not as clear as you may wish, choose closer objects. Use 1 flash for high contrast, and two for even illumination and rich colors. The 3X Close-Up lens can be used for distances of 2 ft. to 4 ft. / 60 cm. to 1.2 m., the 8X Close-Up lens for 14" to 16"/35cm. to 40cm., the 16X Close-Up for 8" to 9".

Just a black **silhouette against the bright water surface** can make a dramatic shot.

A "halo" effect can be created by the sun or a light source behind a person or a sea creature.

In bright conditions on land or in snorkeling use ISO 100 print film or ISO 64 for slides. An external **strobe** will also reduce "marine snow", caused by the flash hitting

microscopically small particles like algae or plankton. The primary flash of the camera must be covered with a flash reflector which reflects the light towards the external flash sensor and not directly towards the target. SeaLife Close-Up Lenses also help to reduce marine snow.

For pictures partially above and under water, coat the lens with a touch of detergent. This will prevent water from beading on the lens. This can take many trials until the water surface is exactly on the center of the lens.

e) Key to Good Pictures
Crystal clear water! For film cameras: shooting distance u/w 4 ft. to 5 ft. / 1.2 to 1.5 m. Better 2 to 4 feet and 3X macro lens. FLASH READY light on. Be calm and patient and move very slowly. Hold camera steady. External flash(es) always get you the best pictures, especially below 30 feet/10 m. or in darker light. **Shoot the same scene several times with different distances.**

Maximum depth ratings: ReefMaster Film: 164 ft. / 50 m. SportDiver II: 164 ft. / 50 m.

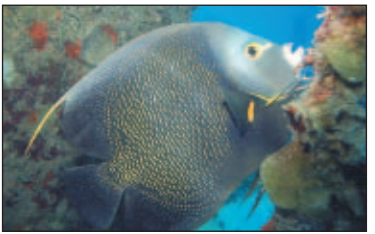
Film: ISO 200. Use ISO 100 print or slide film in extremely bright conditions, on beaches or snorkeling. **Processing:** Tell your photo lab that you're developing underwater pictures and to increase red and yellow as needed to balance the picture color. Request sample prints.

f) Taking Pictures Underwater

Depth: All ReefMaster and SportDiver II film models are tested to 164 ft./ 50 m.

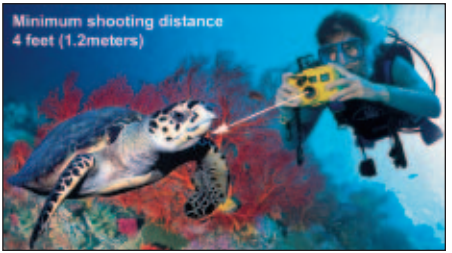
Approach your subject slowly. It's best to remain motionless. Wait for fish to become confident and swim into a good position, best against the current. Aiming of film cameras should be done only through the sports finder, holding it directly to your mask or learn to aim with stretched out arms. The ring in the center must appear as a circle, not as an oval. The optical viewfinder (looking through the camera housing) is intended only for a rough check on your framing.

Press the shutter release swiftly and completely down, not in a slow motion, holding the camera firm and steady. Let the trigger come up swiftly as well, don't keep it down. Never force the shutter release beyond its normal stop position. Protect it well from pressure by other gear in your dive bag.



g) Distance Without Close-Up Lens

The **distance of film cameras to the object should never be less than 4 ft. / 1.2 m., ideally 5 ft. to 6 ft. / 1.5 to 1.80 m**. Longer distances are only successful in extremely clear water and to background objects. The general rule is: **Water visibility (horizontally) should be 10 times the shooting distance.**



Minimum distance without close-up lens.

The built-in flash is designed for foreground illumination and richer colors at distances up to 5 ft. / 1.20 m. The orange “Coral Flash” of the ReefMaster RC will help to avoid the U/W blue effect of near-by objects. Always wait until the green FLASH READY light on the back of the camera turns on before taking a picture (about 10 sec).

Tip: Measure your closest distance “Chin to Fin” on land. Once you have determined a length of 5 ft. / 1.5 m., stretch out your legs under water and test your distance judgment.

You will soon learn that distances underwater appear 1/3 closer than they actually are. The ideal distance is 5 ft./1.20m… “from chin to fin” without macro or wide angle lens.

h) Distance Range for SeaLife Film Cameras

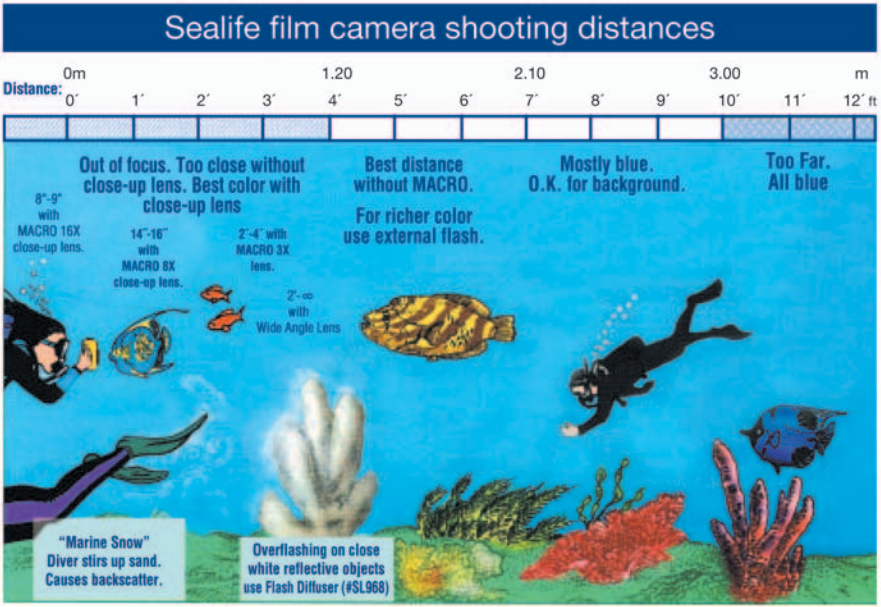
LENS	UNDERWATER		ON LAND	
	inches	cm	inches	cm
Standard	48" - ∞	120 cm - ∞	48" - ∞	120 cm - ∞
Macro 3X	24-48"	60-120 cm	10-14"	25-36 cm
Macro 8X	14-16"	36-41 cm	4-5"	10-13 cm
Macro 16X	8-9"	20-23 cm	2-3"	5-8 cm
Wide Angle 24mm	24" - ∞	60 cm - ∞	n/a	n/a

The correct distances are easy to remember.

- Stretch out your fin: "from chin to fin" is the distance with a standard lens.
- Stretch out your arm as far as you can reach. This is the distance for the 3X Macro lens.
- The 8X and 16X Macro lens come with the practical Macro Wand, which gives you an exact distance. The SeaLife Wide Angle lens expands the picture frame by 50%.

Macro lens on

Macro lens off



Proper shooting distance chart for all Sealife film cameras

i) Pictures on Boats and Beaches

SeaLife cameras should always be used in their waterproof housing when taking pictures in any humid, sandy, or hazardous environments. The tough housing is not only a good protection against moisture but also against sand as well as shocks and bumps on adventurous trips.

j) Catch, Click and Release

Sport fishermen can rely on their SeaLife Camera to capture the image of that trophy fish before it's released.

k) Pictures on Land in Dry Conditions

On land, in dry conditions you will enjoy the compact and light weight SeaLife camera without housing.

Keep the lens cover of film cameras closed and keep the digital camera on land always in its soft case so the lens stays clean.

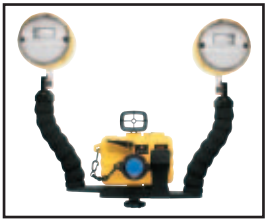
Film selection: Use ISO 200 as general rule. On land or in shallow water, in bright light, you may also use ISO 100 film (instead of ISO 200). **Slides:** ISO 200 slide film can be used for diving, but in bright snorkel or beach conditions ISO 100 or 64 should be used.

l) Using the Flash

The built-in flash in **film cameras** is automatic on land and underwater, and will fire in dark light conditions. The ReefMaster RC allows manual override for a fill flash to avoid dark shadows or to suppress the flash. This is done by holding the slide switch as shown.

Truly colorful pictures require the **SeaLife External Flash**, particularly deeper than 20 ft./6 m. The External Flash reduces backscatter, if the flash head is moved far away from the lens. Two flashes reduce shadows and are used in most professional photography.

Film camera, ReefMaster Pro Set, with external flash and Macro 3X lens/filter.



The Reefmaster Maxx with 2 flashes and Close-Up lenses.

m) Inspiring Books

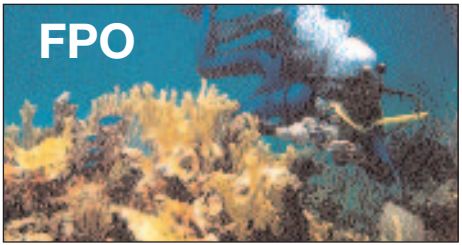
Visit the website www.sealife-cameras.com and see pictures, links, and the latest SeaLife publications on underwater photography. Every dive or photo dealer with an underwater camera department will have some worthwhile books on underwater photography. An illustrated reference book should be your constant companion as well as this manual. Keep it inside your SeaLife Dry Box. The best book, however, is the one you yourself compose.

n) An U/W Photo Course can be very enjoyable.

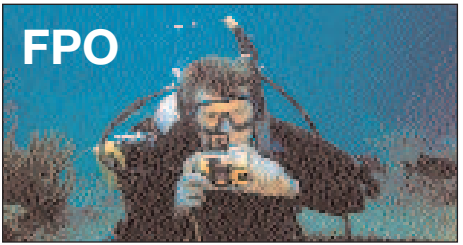
Ask your dive instructor. Your dive store also offers a variety of trips with “Underwater Photo Safaris” to the world’s most beautiful reefs in good company and with a knowledgeable guide.

VI. Examples of Good & Bad Pictures

a) Stay Within the Ideal Distance

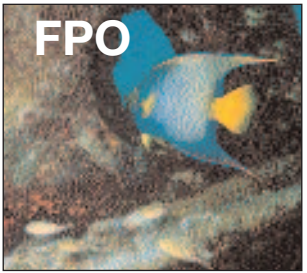


Distance 6 ft. / 1.80 m, regular lens, shallow, sunny

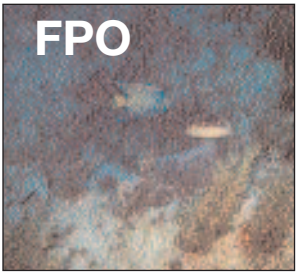


Distance 3 ft. / 90 cm with MACRO 3X close-up lens

2 ft., too close for film camera
use 3X Close-Up lens



Distance 4 to 5 ft., regular lens
better picture



Distance 8 ft., too far

Good & Bad Pictures

b) Crystal Clear Water

No matter what equipment you use, good underwater pictures require crystal clear water. (It is important to remember that the human eye can see more detail than any camera.)

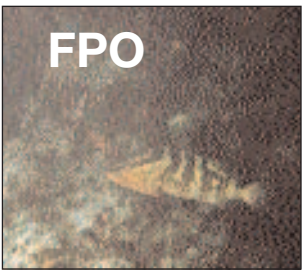
Avoid floating particles stirred up by currents, waves or divers.

Low visibility is caused by small particles, like algae. Use the Close-Up lens

3X lens 2-4 ft./
8X lens 14"-16" / 36 cm. to 41 cm.
16X lens

Visibility better than 50 ft./15m (horizontally) gives you the best pictures. Shoot at the ideal range, 4 to 5 ft./1.2 to 1.5 m. or even closer with a macro lens.

Backscatter of the internal flash from sand.



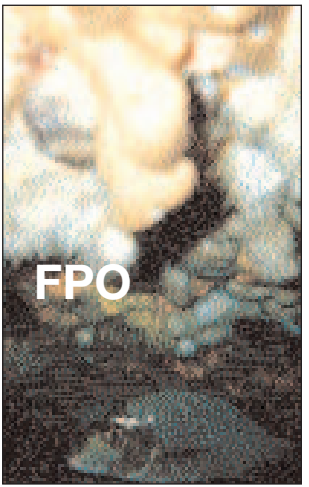
Low visibility use Close-Up lenses

Perfect visibility

Good & Bad Pictures

c) External Flash: The purpose of a U/W flash is to bring out colors at the ideal shooting range inside 8 ft. / 2.5m., not to illuminate objects at longer distances.

Distance 4 ft., In dark cave. (regular lens, double ext. flash)



Overflash on close object. (regular lens, ext.flash, also aimed too high) use Diffuser (SL968)

The MACRO lens/uw filter corrects color and moderates the flash (2 ft. / 60cm.)

Good & Bad Pictures

d) Composition: Look for good color contrast between object (fish), surrounding (coral) and background (water). Look for exciting shapes.

Good contrast (with MACRO 3X close-up lens)

Interesting Coral Shapes (with regular lens)

e) Color Correction: UW filter, macro lens, special processing, or editing are ways to increase yellow and red. *Request to see sample prints at your photo lab, called index prints.*

Below 30 ft./10 m. most yellow and red is absorbed by the water, leaving only blue.

Here the photo lab added yellow and red.

VII. SeaLife Film Camera Models and Accessories

a) Spare Parts: Most important spare parts and item numbers.

	FILM	
	ReefMaster RC	**Sport Diver II**
inner camera	SL201	SL54501
housing	SL210	SL2101A
lid o-ring	Not available - seek authorized service	Not available - seek authorized service
body o-ring	Not available - seek authorized service	Not available - seek authorized service
o-ring cement	Not available - seek authorized service	Not available - seek authorized service
sports finder	SL22118	SL22118
Hard Case/Pick & Pluck Foam Insert	SL930	SL930

Many SeaLife dealers carry spare parts. Ask your local dive dealer. If you purchased your ReefMaster in the United States, you can also order replacement or spare parts from:Optic Options: orders only: (800) 872-0273 / information only: (765) 538-3484.

b) SeaLife Close-Up and Wide Angle Lenses / U/W Filters for best close-up pictures

For distance ranges of each lenses see table on page 25.

Macro 3X - Item SL951
2-4ft./60-120 cm. Item

Wideangle Lens:
increases frame by 50 %,
distance
2 ft./60 cm.
-infinity

Item SL970

8X and 16X Filters

Macro Wand

Close-Up Set - Item SL959
includes all above 3 items.
Macro 8X: 14-16"/36-41 cm. (Macro Set)
Macro 16X: 8-9"/20-23 cm (Macro Set)
Macro Wand: Distancing tool for 8X/ 16X retracts and extends, folds sideways when not in use, and attaches to the flash mounting bracket.

Accessories (continued)

c) External Flash - Item SL960

External flash adds color and brightness to your pictures. It also helps reduce backscatter.

Two external flashes can be mounted for maximum brightness, color and to eliminate shadows.

d) Care and Maintenance Items

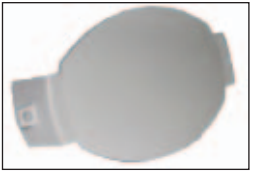
SeaLife/Moisture Muncher Anti-Fog Desiccant

Capsules - Item SL911
10 - 1.5 gram capsules
SeaLife desiccant capsules for digital and film camera models.

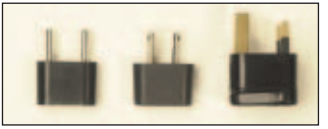
Large - Item M101
Use inside closed hard cases.

NiMH Battery Charger
SL190

4 Rechargeable Ni-MH Batteries, Size AA (Nickel Metal Hydride) SL191



Flash diffuser (SL968) prevents over exposing close-up pictures within 2-1/2' of shooting distance.



3 Foreign Plug Adapters
(included with SL190)

Accessories (continued)

e) SeaLife Soft Padded Camera Cases
Designed to hold all SeaLife Cameras and extra film.

Soft Case for UW Camera
Item SL945

Soft Case for UW Camera and External Flash
Item SL946

Soft Case for UW Camera and 2 External Flash Units and Macro Set
Item SL63001

SeaLife Dive Travel & Accessory Case
Unbreakable airtight case with “pick & pluck” foam and air release valve for camera.

Item SL930

f) SeaLife Film Camera Models

ReefMaster U/W Photo Set
ReefMaster RC with MACRO 3X Close-Up Lens and Dive Travel Hard Case
Item SL511

ReefMaster RC Pro Set
ReefMaster RC with External Flash, MACRO 3X Close-Up Lens and soft carry case.
Item SL560

SeaLife SportDiver II -
Clear Lexan housing, f 5.6/1/125 sec., depth tested to 164 ft./50m.
Item SL545

g) SeaLife Digital Camera Models:

Digital cameras have dramatically changed how we capture, review, and share pictures. As we revise this manual, SeaLife is developing it's 5th generation digital camera. There are too many to list here, so we hope you will visit our website for updates on the latest digital camera models.

Major benefits of SeaLife digital cameras

- Instant Gratification – Review your picture on the color LCD. If you don't like it, delete it. Keep only the best pictures.
- Sharing Your Pictures – You can share your pictures with others between dives or later that day. It's easy to download pictures to your computer and email the best ones to your friends and family.
- Expandable Accessories – All SeaLife camera accessories for film cameras will adapt to and work with SeaLife Digital cameras.

SeaLife Reefmaster DC310 Digital camera (front)

SeaLife Reefmaster DC310 Digital camera (back)

SeaLife Reefmaster DC310 Pro set

VIII. Trouble Shooting Guide

Important: This section must be read before taking any action.

Problem: Film jams or does not advance. *Reason: Most film advance problems are caused by improper film loading.* Solutions: Follow proper film loading instructions on page 10. If film is jammed (will not advance), hit rewind switch on camera, load film again and advance to the frame where it got jammed. If film will not rewind, have a photo shop with a black room remove film for you.

Inspect camera batteries for sufficient power. Replace if necessary.

Problem: Pictures are not satisfactory *Reasons: Poor water visibility* caused by microorganisms (algae) or stirred up sand or sediments. *Improper shooting distance.* Solutions: Keep the proper shooting distance, see chart on page 26.

Problem: Blue pictures. *Reasons: Too far, not enough light.* Solutions: Use macro lens, and/or external flash. Tell lab that you have underwater pictures and that they should make color corrections (Increase red and yellow). With digital pictures you can try to balance the color on your PC. However, it is not possible to increase red and yellow objects, if the picture does not contain any red and yellow at all to begin with.

Problem: Overflashing. *Reason: Close white, reflective objects (fish, rocks, skin, etc).* Solution: Aim External Flash slightly away from close-up objects or use External Flash diffuser.

Problem: Picture too dark. *Reasons: Flash did not fire. Dark light and distance too far for flash.* Solutions: Always wait for flash ready light to turn on before taking pictures, or use External Flash for shooting distances up to 6 to 8 feet (1.8 to 2.5m).

Problem: Pictures not sharp. *Reason: Quick, jerky movements while swimming or chasing fish.* Solutions: Control your buoyancy, stay calm and keep camera still when shooting.
Other reasons: Lenses not clean or fogged. Solutions: Always keep camera and housing lenses clean. Finger prints and dirty lenses will result in unclear pictures. It's a good practice to inspect the glass port for fogging while underwater.

Problem: Housing fogs-up while underwater. *Reasons: One drop of water trapped inside the housing can cause the lens to fog.* Setting up the camera and sealing the housing in a hot, humid area can cause fogging, when the camera cools down in colder water. Solutions: Inner camera or inside housing must be perfectly dry. Use SeaLife Anti Fog Desiccant (page 12), set-up camera in an air-conditioned room, and rub a drop of antifog lotion on the inside of the port lens. If you still experience fogging you may have a leak.

Problem: Housing leaks water. *Reason: O-ring does not seal properly.* Solutions:
1) Hold the camera steady so that small amounts of water can stay in a corner of the housing and surface safely and slowly, handing the camera slowly to a person on the boat who must keep the camera in the same position. Remove the inner camera slowly, and dry off camera as quickly as possible.
2) Remove batteries immediately. Never operate a camera that has been flooded or is wet. You can get a shock and cause more damages.
3) Inspect main O-ring and sealing area for damage or debris (sand, hair, etc.). If O-ring shows damage or imperfection, have it replaced by an authorized Sealife service center.

4) Make sure glass port is not split or cracked. Inspect for other obvious damages that may cause a leak in the housing (Cracks, tears, punctures, etc.).

5) Make sure the Moisture Muncher capsule is not interfering with the O-ring or sealing area. Follow instructions on page 12.

6) Inspect closing latches for damage and proper tension. If damaged or bent, have latches replaced by authorized Sealife service center. A waterproof test can be performed at most scuba dive stores. A simple home test can be made by submerging the housing without inner camera in water overnight. Place 2 lb./1kg soft weight wrapped in a paper napkin in housing. Carefully dry and open housing not to drip water inside and inspect towel for water spots indicating a leak.

Problem: Glare or reflection appears in picture. *Reason: Improperly attached macro lens.* Solutions: The close-up lens must be completely pushed on the housing and sit flat. Make sure your hand does not push on the macro lens or pull on the safety lanyard of the lens. Or have a new docking port ring attached to your camera at a SeaLife service center.

Problem: Flash does not fire. *Reason: Flash-ready light was not on.* Or: External flash head sensor was not directed towards camera. Solution: Wait for flash ready light to turn on before shooting picture. Test and replace batteries if necessary. Flash is automatic, and may not fire in bright light. Taking another shot at a different angle with more dark background will cause the flash to fire. Make sure the flash sensor of the external flash is directed towards the camera, since the primary flash of the camera triggers all secondary flashes.

IX. Service and Warranty

This product will be replaced or repaired free of charge within 1 year from the purchase date in the case of a manufacturing defect, if the complete defective product is sent freight prepaid at the sender's risk to: Pioneer Research, 97 Foster Road, Suite 5, Moorestown, NJ 08057 or to the importer in a different country. Contact the service center to obtain a return authorization #, before shipping product. Include a letter describing the damage or defect, your return address (no PO Box), daytime phone # and a copy of the original purchase receipt or proof of purchase with the purchase date. Excluded are any consequential damages, cosmetic damages, damages to products which show abuse, non-conformance with the instructions, particularly water damage due to a damaged O-ring or removed O-ring or any particles wedged between the housing and the O-ring, or tampering and attempted repair of the product. Excluded are scratches on lenses or damaged lens coatings. Products used in rental operations are excluded from this warranty.

To obtain R A # contact Customer Service at 1-800-257-7742

Pioneer Research, 97 Foster Road, Suite 5, Moorestown, NJ 08057 USA
Phone: (856)-866-9192 • Fax: (856)-866-8615.

Register your warranty online at www.sealife-cameras.com
E-mail:

Customer Service: **info@sealife-cameras.com**
Repair Department: **service@sealife-cameras.com**

Or contact the SeaLife distributor in your country.

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